

CLAIMS

What is claimed is:

1. A method for providing performance analysis on a system including a cluster, the cluster including a plurality of nodes, the method comprising the steps of:

(a) obtaining data for the plurality of nodes in the cluster, the data relating to a plurality of monitors for the node,

(b) analyzing the data to determine whether performance of the cluster can be improved;

(c) providing at least one remedy to improve performance of the cluster if the performance of the cluster can be improved, the at least one remedy capable of including a cluster level remedy.

2. The method of claim 1 wherein the data analyzing step (b) further includes the steps of:

(b1) determining whether a bottleneck exists for at least one monitor of the plurality of monitors for the plurality of nodes.

3. The method of claim 2 wherein the data analyzing step (b) further includes the step of:

(b2) determining whether a latent bottleneck exists for at least one monitor of the plurality of monitors for the plurality of nodes.

1 4. The method of claim 2 wherein the data analyzing step (b) further includes
2 the step of:

3 (b2) forecasting a future bottleneck for at least one monitor of the plurality of
4 monitors for the plurality of nodes.

1 5. The method of claim 1 wherein the plurality of monitors include disk
2 utilization, CPU utilization, memory using and LAN.

1 6. The method of claim 1 wherein the cluster remedy is capable of including
transferring a load from a first node of the plurality of nodes to a second node of the plurality
of nodes.

1 7. The method of claim 1 wherein the cluster remedy is capable of including
adding a new node to the plurality of nodes of the at least one cluster.

1 8. The method of claim 1 wherein the cluster remedy is capable of including
warning that if a particular node of the plurality of nodes fails, at least one remaining node of
2 the plurality of nodes may become bottlenecked.
3

1 9. The method of claim 1 the cluster remedy capable of including a notification
2 that a companion node of the plurality of nodes may be a source of a bottleneck if another
3 node of the plurality of nodes is bottlenecked.

1 10. The method of claim 1 wherein a node of the plurality of nodes carries a
2 workload and has a bottleneck, wherein a companion node of the plurality of nodes is
3 capable of supporting a portion of the workload, and wherein the cluster remedy is capable
4 of including a notification that the portion of the workload can be moved to the companion
5 node.

1 11. The method of claim 1 wherein if a node of the plurality of nodes fails, at
2 least one remaining node of the plurality of nodes will become bottlenecked and wherein the
3 cluster remedy is capable of including notification that if the node fails, the at least one
remaining node of the plurality of nodes will become bottlenecked.

12. The method of claim 1 further comprising the step of:

(d) obtaining information relating to the cluster, the information including an
indication of whether each of the plurality of nodes is a passive node, a maximum number of
nodes in the cluster and a type of LAN adapter used for interconnecting the plurality of
nodes.

1 13. A method for providing performance analysis on a network including a
2 plurality of computer systems, the plurality of computer systems including a cluster, the
3 cluster including a plurality of nodes, the method comprising the steps of:

4 (a) obtaining data for each of the plurality of computer systems, the data relating
5 to a plurality of monitors for each of the plurality of computer systems;

6 (b) determining whether each of the plurality of computer systems is the cluster;

7 (c) if a computer system of the plurality of computer systems is the cluster,
8 analyzing data for each of the plurality of nodes in the cluster to determine whether
9 performance of the cluster can be improved;

10 (d) if the computer system of the plurality of computer systems is not the cluster,
11 then analyzing data for the computer system to determine whether the performance of the
12 computer system can be improved; and

13 (e) providing at least one remedy to improve performance of the network if the
14 performance of the network can be improved, the at least one remedy capable of including a
15 cluster level remedy only for the cluster.

16 14. A computer-readable medium including a program for providing performance
17 analysis on a system including a cluster, the cluster including a plurality of nodes, the
18 program including instructions for:

19 (a) obtaining data for each node of the plurality of nodes in the cluster, the data
20 relating to a plurality of monitors for the node,

21 (b) analyzing the data to determine whether performance of the cluster can be
22 improved; and

23 (c) providing at least one remedy to improve performance of the cluster if the
24 performance of the cluster can be improved, the at least one remedy capable of including a
25 cluster level remedy.

26 15. A system programmed to provide performance analysis on a network
27 including a plurality of systems, the plurality of systems including a cluster, the cluster

including a plurality of nodes, the system comprising:

means for obtaining data for each node of the plurality of nodes in the cluster, the data relating to a plurality of monitors for the node and for analyzing the data to determine whether performance of the cluster can be improved; and

a graphical user interface for displaying at least one remedy to improve performance of the cluster if the performance of the cluster can be improved, the at least one remedy capable of including a cluster level remedy.

16. The system of claim 15 wherein the obtaining and analyzing means further include a plurality of agents residing in the plurality of computer systems.